

O-XYLENE

XLO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 1,2-Dimethylbenzene Xylol		Watery liquid	Colorless	Sweet odor
Floats on water. Flammable, irritating vapor is produced.				
<p>Keep people away. Shut off ignition sources and call fire department. Avoid contact with liquid and vapor. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	<p>FLAMMABLE Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear self-contained breathing apparatus. Extinguish with foam, dry chemical, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>			
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose and throat. If inhaled, will cause headache, difficult breathing, or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. If swallowed, will cause nausea, vomiting, or loss of consciousness. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.</p>			
Water Pollution	<p>Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: o-C₈H₁₀(CH₃)₂
2.3 IMO/UN Designation: 3.2/1307
2.4 DOT ID No.: 1307
2.5 CAS Registry No.: 95-47-6
2.6 NAERG Guide No.: 130
2.7 Standard Industrial Trade Classification: 51124

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment:** Approved canister or air-supplied mask; goggles or face shield; plastic gloves and boots.
- 3.2 Symptoms Following Exposure:** Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma. Can be fatal. Kidney and liver damage can occur.
- 3.3 Treatment of Exposure:** INHALATION: remove to fresh air; administer artificial respiration and oxygen if required; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
- 3.4 TLV-TWA:** 100 ppm
3.5 TLV-STEL: 150 ppm
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 3; LD₅₀ = 50 to 500 mg/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Kidney and liver damage.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 Odor Threshold: 0.05 ppm
3.13 IDLH Value: 900 ppm
3.14 OSHA PEL-TWA: 100 ppm
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point:** 90°F C.C.
4.2 Flammable Limits in Air: 0.9 - 6.7%
4.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 869°F
4.8 Electrical Hazards: Class I, Group D
4.9 Burning Rate: 5.8 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichiometric Air to Fuel Ratio: 50.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water:** No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity:** >100 mg/l/96 hr/D. magna/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 0 lb/lb. 5 days; 2.5% (theor.), 8 days
6.4 Food Chain Concentration Potential: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: 1
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 Grades of Purity:** Research: 99.99%; Pure: 99.7%; Commercial: 95+%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No reaction
7.4 Venting: Open (flame arrester) or pressure-vacuum
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category:** Flammable liquid
8.2 49 CFR Class: 3
8.3 49 CFR Package Group: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:
- | | |
|---------------------------|----------------|
| Category | Classification |
| Health Hazard (Blue)..... | 2 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 0 |
- 8.6 EPA Reportable Quantity:** 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: U239
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm:** Liquid
9.2 Molecular Weight: 106.16
9.3 Boiling Point at 1 atm: 291.9°F = 144.4°C = 417.6°K
9.4 Freezing Point: -13.3°F = -25.2°C = 248.0°K
9.5 Critical Temperature: 674.8°F = 357.1°C = 630.3°K
9.6 Critical Pressure: 541.5 atm = 36.84 psia = 3.732 MN/m²
9.7 Specific Gravity: 0.880 at 20°C (liquid)
9.8 Liquid Surface Tension: 30.53 dynes/cm = 0.03053 N/m at 15.5°C
9.9 Liquid Water Interfacial Tension: 36.06 dynes/cm = 0.03606 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.068
9.12 Latent Heat of Vaporization: 149 Btu/lb = 82.9 cal/g = 3.47 X 10⁵ J/kg
9.13 Heat of Combustion: -17,558 Btu/lb = -9754.7 cal/g = -408.41 X 10⁵ J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: 30.64 cal/g
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: 0.28 psia

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
15	56.460	35	0.389	35	1.043	15	1.328
20	56.330	40	0.391	40	1.035	20	1.263
25	56.190	45	0.394	45	1.027	25	1.202
30	56.050	50	0.396	50	1.018	30	1.145
35	55.910	55	0.398	55	1.010	35	1.092
40	55.770	60	0.400	60	1.002	40	1.042
45	55.630	65	0.402	65	0.993	45	0.995
50	55.490	70	0.404	70	0.985	50	0.952
55	55.360	75	0.406	75	0.977	55	0.911
60	55.220	80	0.408	80	0.969	60	0.873
65	55.080	85	0.411	85	0.960	65	0.836
70	54.940	90	0.413	90	0.952	70	0.802
75	54.800	95	0.415	95	0.944	75	0.770
80	54.660	100	0.417	100	0.935	80	0.740
85	54.520					85	0.712
90	54.380						
95	54.250						
100	54.110						

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	60	0.071	60	0.00135	0	0.261
	N	70	0.101	70	0.00188	25	0.274
	S	80	0.141	80	0.00258	50	0.287
	O	90	0.194	90	0.00349	75	0.299
	L	100	0.263	100	0.00464	100	0.311
	U	110	0.352	110	0.00511	125	0.323
	B	120	0.465	120	0.00794	150	0.335
	L	130	0.609	130	0.01021	175	0.347
	E	140	0.787	140	0.01298	200	0.358
		150	1.007	150	0.01634	225	0.370
		160	1.277	160	0.02038	250	0.381
		170	1.605	170	0.02520	275	0.392
		180	1.999	180	0.03090	300	0.403
		190	2.469	190	0.03759	325	0.414
		200	3.028	200	0.04539	350	0.424
		210	3.686	210	0.05443	375	0.435
		220	4.456	220	0.06484	400	0.445
		230	5.352	230	0.07674	425	0.455
		240	6.389	240	0.09030	450	0.465
		250	7.581	250	0.10560	475	0.475
		260	8.947	260	0.12290	500	0.485
						525	0.494
						550	0.504
						575	0.513
						600	0.522